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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/624,578

07/22/2003

Steven R. Nelson

6991.US.01

7508

23492

7590

10/11/2006

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DEPT. 377/AP6A

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EXAMINER

BELT, SAMUEL E

ART UNIT

PAPER NUMBER

3746

DATE MAILED: 10/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/624,578	<b>Applicant(s)</b> NELSON ET AL.	
	<b>Examiner</b> Samuel E. Belt	<b>Art Unit</b> 3746	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>02/05/04 &amp; 03/10/04</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement's (IDS) submitted on 2/5/2004 & 3/10/2004 are acknowledged. Since submission complies with 37 CFR 1.97 and 1.98, the examiner has considered the references listed therein.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Epstein et al. (US Patent 5,464,392).

A medical pump for use with a cassette (Figure 1, item 12) having a pumping chamber (Figure 1, item 20), comprising: a pumping element (Figure 1, item 46) adapted to intermittently pressurize the pumping chamber during a pumping cycle; means (Figure 1, item 34) for closing the pumping chamber to flow during at least a portion of the pump cycle when the pumping chamber is pressurized by the pumping element; and a single pressure sensor (Figure 1, item 40) operatively connected to the pumping element to detect the pressure exerted by the pumping element on the

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pumping chamber; wherein said means includes an inlet control element (Figure 1, item 18) and an outlet control element (Figure 1, item 28) adapted to close the pumping chamber to flow during at least a portion of the pump cycle when the pumping chamber is pressurized by the pumping element; and a camshaft (column 19, lines 4+) associated with the pumping element, inlet control element, and outlet control element for closing the pumping chamber to flow during at least a portion of the pump cycle when the pumping chamber is pressurized by the pumping element; further including a processing unit (Figure 1, item 48) in electronic communication with the pressure sensor, wherein the processing unit processes pressure data from the pressure sensor to determine the operating condition of the pump; wherein the operating condition (column 28, line 50+) determined is blocked fluid flow, no fluid in the line, no cassette associated with the pump, proper pump priming, or proper valve sealing; further including a position sensor (Figure 10, item 444) in electronic communication with the processing unit and operatively associated with the pumping element to detect the position of the pumping element, wherein the processing unit processes position data from the position sensor to associate the incoming pressure data with a particular portion of the pump cycle.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-14, 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Epstein et al. (US Patent 5,464,392) in view of Pastrone (US Patent 4,453,931). Epstein et al. sets forth a device as described above, which is substantially analogous to the claimed invention. The Epstein et al. device differs from the claimed invention in that there is no explicit teaching of the pumping element being a piston slider assembly having a single pressure sensor. Pastrone teaches an intravenous metering device having a piston slider assembly (Figure 3, item 51) as the pumping element with a single pressure sensor (Figure 3, item 57) for monitoring the pressure in the pressure chamber.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modify the Epstein et al. device by using the piston pumping element, as taught by Pastrone, in order to displace fluid in the pumping system, which in turn provides a fluid flow to the patient.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Epstein et al. (US Patent 5,464,392) in view of Pastrone (US Patent 4,453,931) and in further view of Das et al. (US Patent Application 2002/0128594 A1). The Epstein et al. as modified by Pastrone apparatus sets forth a device as described above, which is substantially analogous to the claimed invention. The Epstein et al. as modified by Pastrone device differs from the claimed invention in that there is no explicit teaching of

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the pressure sensor as being a force sensor. Das et al. teach an infusion device having a force sensor (Figure 1, item 16) as the occlusion detection means.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modify the Epstein et al. as modified by Pastrone device by using the force sensor, as taught by Das et al., in order to better detect any occlusions which may arise during treatment of a patient.

### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Abbott (US Patent 4,840,542) discloses the general nature of the art.

Archibald (US Patent 4,322,201) discloses the general nature of the art.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel E. Belt whose telephone number is (571) 272-7820. The examiner can normally be reached on M-F, 8 - 4:30EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe can be reached on (571) 272-4444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
SEB

  
ANTHONY D. STASHICK  
PRIMARY EXAMINER